

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A SUBMISSION UNDER 35 U.S.C. 371		ATTORNEY'S DOCKET NUMBER 101280.54981US U.S. APPLICATION NO. (If known, see 37 CFR 1.5) 10/501,382
INTERNATIONAL APPLICATION NO. PCT/DE03/00079	INTERNATIONAL FILING DATE 01/13/2003	PRIORITY DATE CLAIMED 01/16/2002
TITLE OF INVENTION CONTAINER		
APPLICANT(S) FOR DO/EO/US Hubert BUCHER, et al.		
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:		
1. <input type="checkbox"/> This is a FIRST submission of items concerning a submission under 35 U.S.C. 371. 2. <input checked="" type="checkbox"/> This is a SECOND or SUBSEQUENT submission of items concerning a submission under 35 U.S.C. 371. 3. <input type="checkbox"/> This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below. 4. <input checked="" type="checkbox"/> The US has been elected (Article 31). 5. <input type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2)) a. <input type="checkbox"/> is attached hereto (required only if not communicated by the International Bureau). b. <input type="checkbox"/> has been communicated by the International Bureau. c. <input type="checkbox"/> Is not required, as the application was filed in the United States Receiving Office (RO/US). 6. <input type="checkbox"/> An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)). a. <input type="checkbox"/> is attached hereto. b. <input type="checkbox"/> has been previously submitted under 35 U.S.C. 154(d)(4). 7. <input type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)) a. <input type="checkbox"/> are attached hereto (required only if not communicated by the International Bureau). b. <input type="checkbox"/> have been communicated by the International Bureau. c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired. d. <input type="checkbox"/> have not been made and will not be made. 8. <input type="checkbox"/> An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)). 9. <input checked="" type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)), including attached copy of the application. 10. <input type="checkbox"/> An English language translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)). Items 11 to 20 below concern document(s) or information included: 11. <input type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98. 12. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included. 13. <input type="checkbox"/> A preliminary amendment. 14. <input type="checkbox"/> An Application Data Sheet under 37 CFR 1.76. 15. <input type="checkbox"/> A substitute specification. 16. <input type="checkbox"/> A power of attorney and/or change of address letter. 17. <input type="checkbox"/> A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 37 CFR 1.821- 1.825. 18. <input type="checkbox"/> A second copy of the published International Application under 35 U.S.C. 154(d)(4). 19. <input type="checkbox"/> A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4). 20. <input checked="" type="checkbox"/> Other items or information: Copy of the Notification of Missing Requirements.		

This collection of information is required by 37 CFR 1.414 and 1.491-1.492. The information is required to obtain or retain a benefit by the public, which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 15 minutes to complete, including gathering information, preparing, and submitting the completed form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop PCT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

The PTO did not receive the following
listed item(s) oath

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

U.S. APPLICATION NO. (if known, see 37 CFR 1.5) 10/501,382		INTERNATIONAL APPLICATION NO. PCT/DE03/00079		ATTORNEY'S DOCKET NUMBER 101280.54981US	
The following fees have been submitted				CALCULATIONS PTO USE ONLY	
21.	<input type="checkbox"/> Basic national fee			\$	
22.	<input type="checkbox"/> Examination fee				
If International preliminary examination report prepared by USPTO and all claims satisfy provisions of PCT Article 33(1)-(4)				\$	
All other situations				\$	
23.	<input type="checkbox"/> Search fee				
Search fee (37 CFR 1.44(a)(2)) has been paid on the international application to the USPTO as an International Searching Authority				\$	
International Search Report prepared and provided to the Office				\$	
All other situations				\$	
TOTAL OF 21, 22 AND 23 =				\$	
<input type="checkbox"/> Additional fee for specification and drawings filed in paper over 100 sheets (excluding sequence listing or computer program listing filed in an electronic medium). The fee is \$250 for each additional 50 sheets of paper or fraction thereof.					
Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof (round up to a whole number)		RATE	
- 100	/ 50 =			x 250	\$
Surcharge of \$130.00 for furnishing the oath or declaration later than 30 months from the earliest claimed priority date (37 CFR 1.492(h)).				\$130.00	
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total claims	- 20		x 50	\$	
Independent claims	- 3		x 200	\$	
MULTIPLE DEPENDENT CLAIM(S) (if applicable)				+ 360	\$
TOTAL OF ABOVE CALCULATIONS =				\$130.00	
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. Fees above are reduced by 1/2.					
SUBTOTAL =				\$130.00	
Processing fee of \$130.00 for furnishing the English translation later than 30 months from the earliest claimed priority date (37 CFR 1.492(i)).				\$	
TOTAL NATIONAL FEE =				\$130.00	
Fee for recording the enclosed assignment (37 CFR 1.21 (h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property				\$	
TOTAL FEES ENCLOSED =				\$130.00	
				Amount to be refunded:	\$
				Amount to be charged:	\$
<p>a. <input checked="" type="checkbox"/> A check in the amount of \$130.00 to cover the above fees is enclosed.</p> <p>b. <input type="checkbox"/> Please charge my Deposit Account No. 05-1323 (Attorney Docket No. 101280.54981US) in the amount of \$ to cover the above fees. A duplicate copy of this sheet is enclosed.</p> <p>c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 05-1323 (Attorney Docket No. 101280.54981US). A duplicate copy of this sheet is enclosed.</p> <p>d. <input type="checkbox"/> Fees are to be charged to a credit card. WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.</p>					
<p>NOTE: Where an appropriate time limit under 37 CFR 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the International Application to pending status.</p>					
<p>SEND ALL CORRESPONDENCE TO:</p> <p>Crowell & Moring, LLP Intellectual Property Group P.O. Box 14300 Washington, D.C. 20044-4300 Tel. No. (202) 624-2500 Fax No. (202) 628-8844</p>					
<p>VINCENT J. SUNDE <i>[Signature]</i> Registration No. 29,004 NAME James F. McKown 25,406 REGISTRATION NUMBER June 2, 2005 DATE</p>					
JFM:VJS/ck (doc no.) 080404.54981US					

FORM PTO-1390 (REV. 02-2005)

Page 2 of 2

06/06/2005 GFREY1 00000049 10501382

01 FC:1617

130.00 OP

54981US



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
 United States Patent and Trademark Office
 Address: COMMISSIONER FOR PATENTS
 P.O. Box 1450
 Alexandria, Virginia 22313-1450
 www.uspto.gov

U.S. APPLICATION NUMBER NO.	FIRST NAMED APPLICANT	ATTY. DOCKET NO.
10/501,382	Hubert Bucher	080404.54981US

INTERNATIONAL APPLICATION NO.

PCT/DE03/00079

IA. FILING DATE

PRIORITY DATE

01/13/2003

01/16/2002

23911
 CROWELL & MORING LLP
 INTELLECTUAL PROPERTY GROUP
 P.O. BOX 14300
 WASHINGTON, DC 20044-4300

CONFIRMATION NO. 2496

371 FORMALITIES LETTER

OC000000015644645

OC000000015644645

Missing Req due
 6/5/05

Date Mailed: 04/05/2005

NOTIFICATION OF MISSING REQUIREMENTS UNDER 35 U.S.C. 371 IN THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US)

The following items have been submitted by the applicant or the IB to the United States Patent and Trademark Office as a Designated / Elected Office (37 CFR 1.495).

- Copy of the International Application filed on 07/15/2004
- English Translation of the IA filed on 07/15/2004
- Copy of the International Search Report filed on 07/15/2004
- Preliminary Amendments filed on 07/15/2004
- Information Disclosure Statements filed on 07/15/2004
- Oath or Declaration filed on 07/15/2004
- U.S. Basic National Fees filed on 07/15/2004
- Substitute Specification filed on 07/15/2004
- Assignment filed on 07/15/2004
- Priority Documents filed on 07/15/2004

The following items **MUST** be furnished within the period set forth below in order to complete the requirements for acceptance under 35 U.S.C. 371:

- Oath or declaration of the inventors, in compliance with 37 CFR 1.497(a) and (b), identifying the application by the International application number and international filing date. The current oath or declaration does not comply with 37 CFR 1.497(a) and (b) in that it:
 - does not identify the citizenship of each inventor.
- \$130 Surcharge for providing the oath or declaration later than 30 months from the priority date (37 CFR 1.492(e)) is required.

SUMMARY OF FEES DUE:

Total additional fees required for this application is \$130 for a Large Entity:

- \$130 Late oath or declaration charge.

ALL OF THE ITEMS SET FORTH ABOVE MUST BE SUBMITTED WITHIN TWO (2) MONTHS FROM THE DATE OF THIS NOTICE OR BY 32 MONTHS FROM THE PRIORITY DATE FOR THE APPLICATION, WHICHEVER IS LATER. FAILURE TO PROPERLY RESPOND WILL RESULT IN ABANDONMENT.

The time period set above may be extended by filing a petition and fee for extension of time under the provisions of 37 CFR 1.136(a).

Applicant is reminded that any communications to the United States Patent and Trademark Office must be mailed to the address given in the heading and include the U.S. application no. shown above (37 CFR 1.5)

*A copy of this notice **MUST** be returned with the response.*

WINSTON M ALVARADO

Telephone: (703) 308-9140 EXT 206

PART 1 - ATTORNEY/APPLICANT COPY

U.S. APPLICATION NUMBER NO.	INTERNATIONAL APPLICATION NO.	ATTY. DOCKET NO.
10/501,382	PCT/DE03/00079	080404.54981US

Container

BACKGROUND OF THE INVENTION

[0001] This invention relates to a container according to ISO standards, designed as a mobile work space for civilian and military use (shelter).

[0002] ISO containers with a cuboid metal structural frame comprising ISO corners and edge profiles connecting these ISO corners, as well as thermally insulated side walls, ceiling and floor are known from **DE 37 19 301 C2**, for example.

[0003] The construction of the structure for CSC-certified stackable containers (1:1 design, not expandable, e.g., **DE 37 19 301 C2**, and 1:2 and 1:3 expandable designs, e.g., **EP 0 682 156 B1**) is obtained essentially from the stresses that occur in shipping and the vertical loads that occur when up to nine units are stacked (CSC: International Convention for Safe Containers). Point loads and area loads are specified for the container bottom. The tare weight of the equipment to be mounted there must be applied to the walls. Wall cutouts for doors (emergency exit) and for the power supply, air conditioning ducts and optionally the water supply increase the structural complexity and the number of heat bridges.

Substitute Specification
Atty. Docket No. 080404.54981US
Clean Version

[0004] The thermal insulation should not be at the expense of the interior size and/or increasing the empty weight of the container. Heat transfer coefficients of 0.55 to 0.75 W/(m²K) can be achieved easily with sandwich walls having shearing rigidity (sheet metal-polyurethane-sheet metal) with thicknesses of 40 mm to 60 mm. With current designs, the openings, edges and corners increase the k value of the entire container to values substantially greater than 1 W/(m²K).

[0005] For civilian and military applications (mobile sanitation facilities and work rooms such as field command posts and communications systems) for use throughout the world, even under extreme climate conditions, there is a need for reducing the technical complexity and economic cost required for the power supply and [heating and] air conditioning. Transmission losses of the container, which is closed on all sides, may constitute 30% or more of the heating and cooling demand, except for applications with an extremely high fresh air demand (operating rooms).

[0006] The problem of substantially improving the thermal insulation cannot be solved by thicker thermal insulation layers and not with the usual structural designs.

[0007] DE 197 47 181 A1 discloses a refrigerated container or insulated container which includes thermally insulated side walls plus ceiling and floor, each framed by bordering copings. The bordering copings are designed as hollow profiles

Substitute Specification
Atty. Docket No. 080404.54981US
Clean Version

and have a core of thermal insulation material. By way of edge profiles designed in two parts, the side walls, ceiling and floor are fixedly joined together in the area of the bordering copings. One disadvantage of this container is the fact that heat bridges created due to the use of the hollow profiles have a negative effect on the heat transfer coefficient value of the container.

[0008] EP 0 064712 A1 describes a refrigerated container having a continuous insulation layer. The exterior side of the insulation is formed by a steel frame with upper and lower cross beams and exterior wall panels. Interior planking is provided on the inside of the refrigerated container.

SUMMARY OF THE INVENTION

[0009] An object of the present invention is to reduce the heat transfer coefficient of the entire container without any sacrifice in terms of structural rigidity and interior size.

[0010] This object has been achieved by providing that the intermediate space between the two partial profiles is filled completely by a thermally insulating material and side walls, ceiling and floor have a vacuum insulation layer.

[0011] The present invention links two approaches together to achieve this object:

Substitute Specification
Atty. Docket No. 080404.54981US
Clean Version

[[X]] Reducing the transmission component of undisturbed areas by using vacuum insulation material which has a much lower thermal conductivity than polyurethane or mineral wool, for example, to compensate for the disadvantage of heat bridges, and

[[X]] A two-part design of all edge profiles of the container (in the form of two partial profiles running in parallel and thermally separated from one another by thermal insulation material) for all horizontal and perpendicular edges of the cuboid ISO container. The intermediate space between the two partial profiles is filled completely by a thermal insulation material. This principle can also be applied similarly for all frames of area openings such as doors and drop doors. The structure of the container can thus be implemented largely without heat bridges.

[0012] The heat transfer coefficient of the container according to this invention can be brought into the range of $0.5 \text{ W}/(\text{m}^2\text{K})$ by the measures described here without having to accept sacrifices in terms of structural rigidity or interior size. In particular, the inventive container can be stacked several units high without restriction.

[0013] The definite reduction in the heat transfer coefficient to values around $0.5 \text{ W}/(\text{m}^2\text{K})$ in the case of a wall thickness comparable to that of conventional thermally insulated containers reduces the required capacity of the air conditioning

Substitute Specification
Atty. Docket No. 080404.54981US
Clean Version

system by the amount that results from the temperature difference between the interior and the environment and the greater temperature difference (plus and minus) between the air-conditioned air circulating in the side wall ducts and ceiling ducts. Heating of the container by radiant wall heat and/or floor heating thus becomes much more economical.

[0014] The inventive concept may be used for containers that are not expandable (1:1 design) as well as for expandable containers (1:2 design, 1:3 design, e.g., using pull-out elements).

[0015] The inventive container is in compliance with the strength and rigidity values stipulated by ISO standards. It is suitable in particular for stacking (up to nine containers stacked one above the other) and it withstands the stresses that occur (e.g., load due to crane vehicle) in shipping of the container, in which case the force is applied at the ISO corners.

[0016] The vacuum insulation technology developed for terrestrial applications is known per se and is used in the present invention (e.g., **DE 296 08 385 U1**); this translates into a reduction in the weight and volume of the insulation material and thus an increase in the useful volume at a predetermined heat transfer coefficient. A granular or fibrous filler material together with a getter material, if necessary, and IR opacifiers is surrounded by a multilayer laminated film (metal foil and

Substitute Specification
Atty. Docket No. 080404.54981US
Clean Version

polyethylene film). With a system pressure of less than 5 mbar, tight welding of the films and a negligible permeation rate, a lifetime of more than 15 years is achieved at a thermal conductivity of approximately 0.004 W/(mK) according to the manufacturer's information. The size of the vacuum insulation sheets in the thickness range from 10 mm to 30 mm can be adapted to the geometric requirements.

[0017] The vacuum insulation, which is sensitive to damage, is advantageously protected toward the outside by the outer steel plate wall of the container and is preferably protected toward the inside by plastic-laminated plywood boards, the thickness of which is dimensioned for appropriate mounting of furnishings and/or to accommodate floor loads according to the use case of the container.

[0018] In an advantageous embodiment, in addition to an insulation layer of a vacuum insulation material, an additional insulation layer of traditional insulation materials (mineral wool, rock wool, Styropor, Styrodur, polyurethane, etc.), i.e., non-vacuum insulation materials, may also be provided toward the interior.

[0019] The edge profiles which run vertically and horizontally between two ISO corners can absorb normal forces and bending forces and may advantageously be designed as two partial L-shaped profiles merged together but also as two quarter

Substitute Specification
Atty. Docket No. 080404.54981US
Clean Version

circle profiles on the inside and outside or as an expander quarter round profile and a partial profile on the inside comprising a quadrilateral profile or a tube profile.

[0020] The outer sheet metal wall of a container surface, which contributes toward its shear strength, is advantageously welded to the outer partial profile of an edge profile and the ISO corners.

[0021] The large-area interspaces between opposing edge profiles are covered with vacuum insulation sheets, small intermediate spaces are filled with foam or with other conventional insulation materials tailored exactly to fit.

[0022] The intermediate spaces between two partial profiles of an edge profile may also be filled with foam or with conventional insulation materials accurately tailored to fit. The recent development of a weldable steel plate-polyurethane sandwich may be of interest here both economically and from the standpoint of manufacturing technology.

[0023] With the small thickness of the walls and ceilings and the minor ~~recoil~~ ^{offset} of the wall surfaces at the ISO corners, they protrude into the interior of the container. To reduce these heat bridges, these protrusions must be covered with a layer of thermal insulation material in the form of a trunk corner. Especially here but also

07/07/04
07/07/04
07/07/04
07/07/04

offset
07/07/04
07/07/04
07/07/04

Substitute Specification
Atty. Docket No. 080404.54981US
Clean Version

on all thermally critical locations, the thermal insulation is such that the dew point can never be reached anywhere on the inside surface.

[0024] One wall (side wall, ceiling or floor) of the container advantageously comprises the following layers from the ^{out} ~~inside~~ to the ⁱⁿ ~~outside~~:

outer metallic cover layer,
vacuum insulation layer,
additional insulation layer of a non-vacuum insulation material,
plywood layer,
inner metallic or plastic cover layer.

[0025] To reinforce the side wall, ceiling or floor, reinforcing profiles may advantageously also be provided, these profiles being in contact either with the inner or outer metallic cover layer of a side wall, a ceiling or floor and separated from the other cover layer by a thermal insulation intermediate layer. Since the reinforcing profiles form essentially unwanted heat bridges, a metallic material with a low thermal conduction and a high strength may advantageously be selected for them.

[0026] To accommodate floor loads in spots and over the area, a compromise must be made for thermal reasons between thermal conduction, the cross profile of the profile and the distance between the reinforcing profiles (grid dimension). In

07/07/04 *Le*
07/07/04 *Le*
07/07/04 *Le*
07/07/04 *Le*

Substitute Specification
Atty. Docket No. 080404.54981US
Clean Version

addition to the choice of the smallest possible web thickness of the standard profiles, it may also be expedient to use composite welded profiles, with stainless steel plate being advantageous thermally for the web(s), either straight or inclined, because of the lower heat transfer coefficient.

BRIEF DESCRIPTION OF THE DRAWINGS

[0027] These and other objects, features and advantages of the present invention will become more readily apparent from the following detailed description of currently preferred configurations thereof when taken in conjunction with the accompanying drawings wherein:

[0028] FIG. 1 is a partial, cross-sectional view showing the wall design of the container of the present invention with an L-shaped reinforcing profile;

[0029] FIG. 2 is a partial, cross-sectional view showing the wall design of the container of the present invention with an assembled reinforcing profile;

[0030] FIG. 3 is a partial, cross-sectional view through a container of the present invention in the area of an edge profile, where the edge profile consists of two L-shaped partial profiles;

[0031] FIG. 4 is a partial, cross-sectional view through a container of the present invention where the edge profile includes a curved partial profile on the outside and a partial profile of a pipe profile with webs welded onto it on the inside;

[0032] FIG. 5 is a partial, cross-sectional view through a container of the present invention with an edge profile consisting of two L-shaped partial profiles; and

[0033] FIG. 6 is a partial, cross-sectional view through a container of the present invention in the area of a wall passage for a door or a drop door.

DETAILED DESCRIPTION OF THE DRAWINGS

[0034] FIG. 1 shows the wall structure (side walls, floor or ceiling) of container constructed in accordance with the present invention. Beginning from the outside, the multilayer wall structure includes the metallic outside wall 1 (steel plate which is planar or trapezoidal), a layer of vacuum insulation sheets 2 cut to size and inserted and having a thickness which depends on the requirement[s] regarding the quality of the heat transfer, the intermediate layer 3 of conventional insulation materials, e.g., mineral wool, a plywood 4 with a high E modulus to reinforce the wall for secure fastening of the interior furnishings of the container and finally the

Substitute Specification
Atty. Docket No. 080404.54981US
Clean Version

aluminum cover layer 5 which is to be glued onto the wooden board before assembly.

[0035] The total wall thickness is obtained from the wall stiffness requirements which are to be met with the lowest possible web thickness of the reinforcing profile 6 and the greatest possible web length (for definition of a web of a reinforcing profile). *see Fig. 2* Between the L-shaped reinforcing profile 6 and the plywood board 4, a strip 7 of thermal insulation material is inserted. In the present case the reinforcing profile 6 is welded to the metal exterior wall 1 and the wooden boards 4 are attached by a rivet joint 8.

[0036] A variant of the reinforcing profile 6 is shown in FIG. 2 and consists of selecting stainless steel as the material for the web 6' (i.e., the region of the profile 6 which runs across the layer structure and thus in the direction of heat conduction) for reasons of lower heat conduction and to weld it to the belt 6" while otherwise having the same structure. In FIG. 2 the reinforcing profile is designed in a T shape.

[0037] The path of the heat conduction may also be extended by placing the web 6' at an inclination. A symmetrical arrangement of two webs 6' per profile is expedient (symmetrical to a plane of symmetry perpendicular to the wall of the

Substitute Specification
Atty. Docket No. 080404.54981US
Clean Version

container), so that the webs 6', belt 6" and exterior wall 1 form a trapezoid. The resulting hollow space can be filled out with foam.

[0038] FIG. 3 shows a vertical cross section through a container, with part of a side wall and the bottom or floor being shown here. The side wall and bottom have the sequence of layers according to FIG. 1 or FIG. 2: namely exterior cover metal plate 1, vacuum insulation layer 2, insulation layer of traditional insulation material 3, plywood board 4, ^{4'}~~4~~, interior metal cover layer 5. It can be seen here that within the bottom, the plywood layer 4' is slightly thicker than in the case of the corresponding plywood layer 4 in the side wall and the roof (the roof not being shown in FIG. 3). The edge profile of the container is formed from two L-shaped partial profiles 10 and 11 placed one inside the other, welded together at their end faces with ISO corners (one ISO corner 13 is visible in this sectional drawing). The outer cover plates 1 are welded at points 1' and 1" to the profile legs of the outer partial profile 10. The intermediate space between the interior and exterior profiles 10, 11 is filled with insulation material 40, inserted after the welding operation or foamed in place. The entire intermediate space between the profiles 10, 11 is thus filled homogeneously by the insulation material 40 so there are no heat bridges. In particular there are no other beam profiles (in contrast with the abovementioned DE 197 47 181 A1, for example) between the two partial profiles 10, 11. Preferably

07/07/04 Pr 07/07/04 Se
07/07/04 07/07/04
07/07/04 07/07/04

07/07/04 RL
07/07/04 J.
07/07/04 JL
07/07/04 J.

07/07/04 R
07/07/04 R.

07/07/04 R
07/07/04 R.

07/07/04 R
07/07/04 R.

Substitute Specification
Atty. Docket No. 080404.54981US
Clean Version

[0041] FIG. 6 shows one interrupted embodiment of a wall opening for a door or drop door. The layer structure of the wall 40 and of the door or drop door 41 is identical. The layer structure depicted here has only an insulation layer consisting of a vacuum insulation material in contrast with the embodiments depicted in the previous figures. The opening is bordered on the side of the drop door as well as on the wall side by ceiling panels 42, 43 and/or 44, 45 in two parts. The intermediate thermal insulation layers 46, 47 between the ceiling panels 42, 43 and/or 44, 45 prevent the transfer of heat. The element 48 provides the seal around the frame. The hinges 49 are mounted on the outside of the container.

1/5

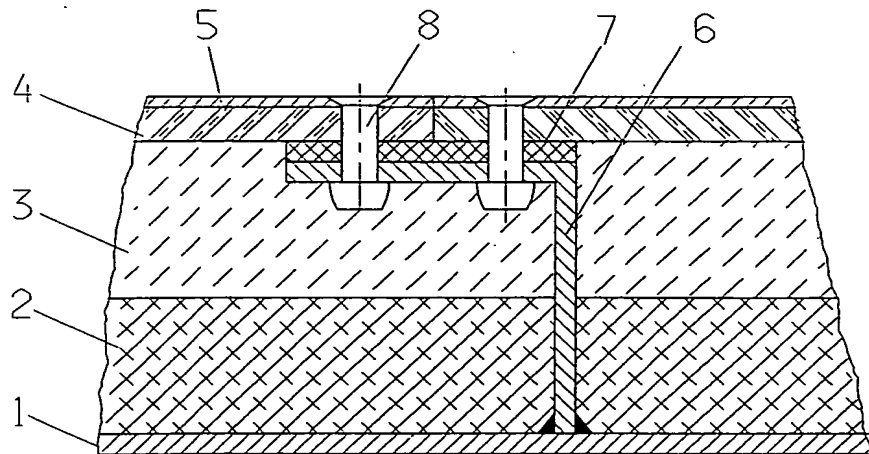


FIG. 1

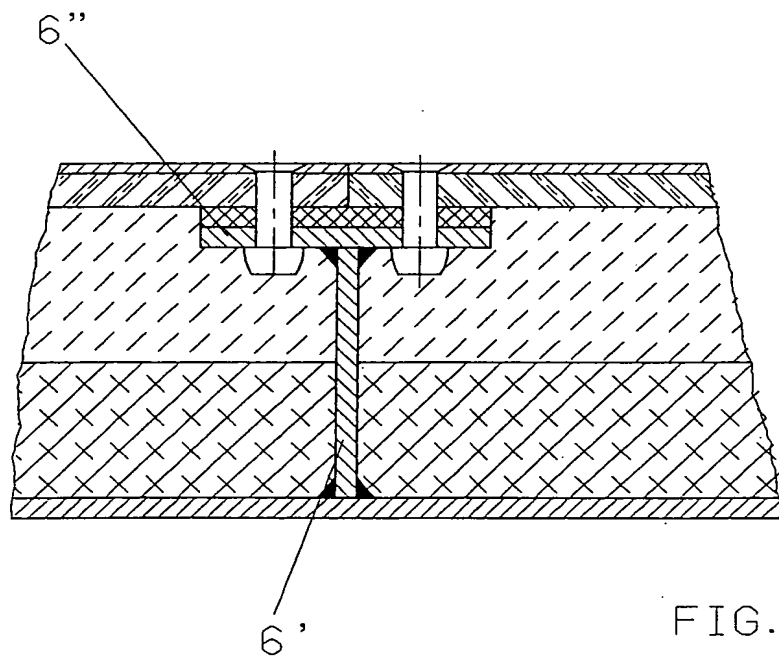


FIG. 2

2/5

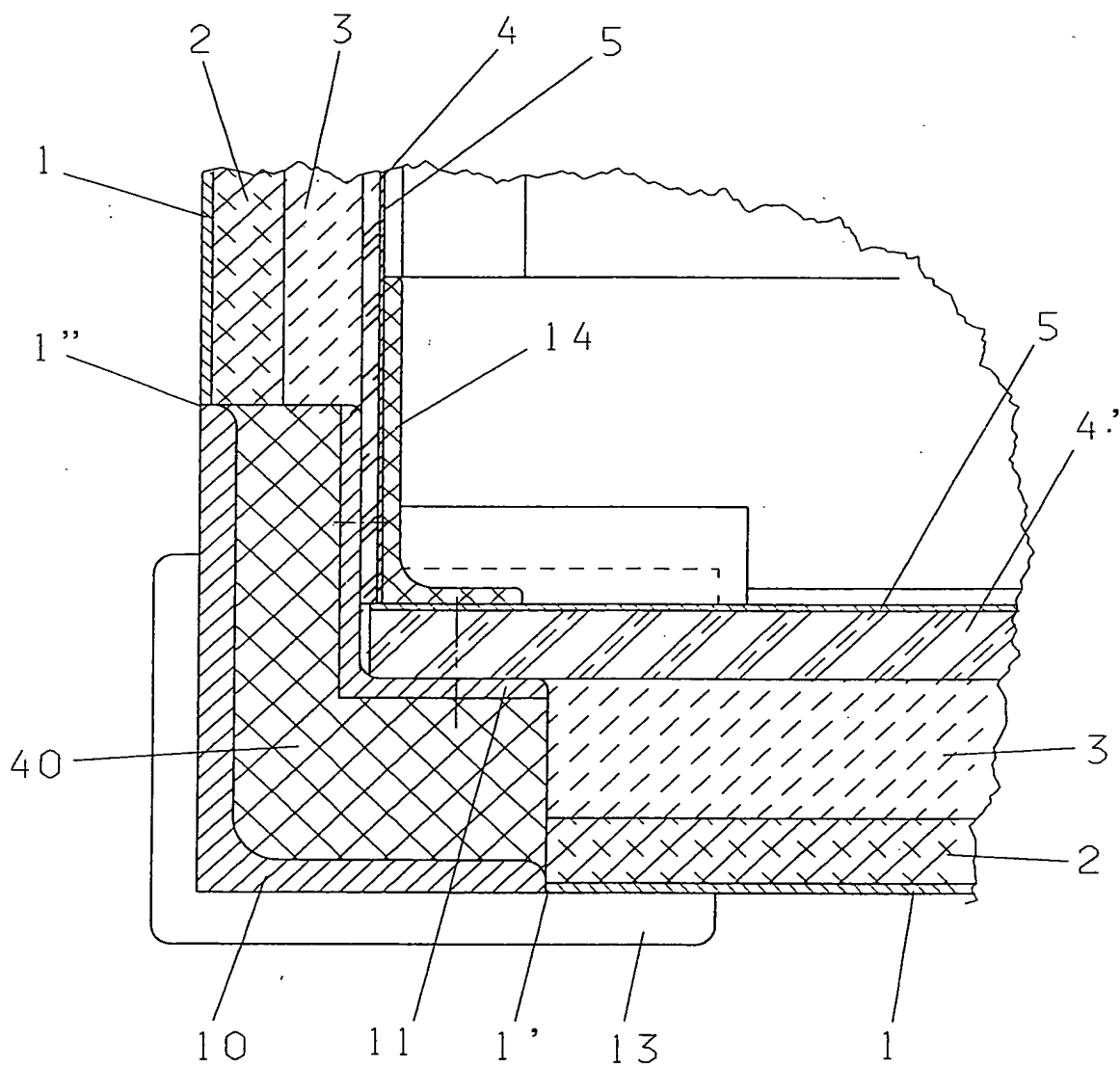


FIG. 3

This technical drawing shows a cross-section of a complex, multi-layered structure. The structure is composed of several distinct layers and components, each identified by a number and a specific hatching pattern for clarity.

- Layer 1:** The outermost layer on the left, indicated by a cross-hatch pattern.
- Layer 2:** A thin layer adjacent to layer 1, indicated by a diagonal hatch pattern.
- Layer 3:** A thicker layer, indicated by a diagonal hatch pattern.
- Layer 4:** A thin layer, indicated by a diagonal hatch pattern.
- Layer 5:** The rightmost layer, indicated by a diagonal hatch pattern.
- Component 10:** A large, U-shaped component at the bottom, indicated by a cross-hatch pattern.
- Component 11:** A vertical component on the left, indicated by a cross-hatch pattern.
- Component 13:** A horizontal component at the bottom, indicated by a cross-hatch pattern.
- Component 14:** A horizontal component in the middle, indicated by a cross-hatch pattern.
- Component 40:** A large, U-shaped component at the bottom, indicated by a cross-hatch pattern.

The drawing includes various hatching patterns (cross-hatch, diagonal lines, and solid lines) to distinguish between different materials or layers. The structure is shown in a cross-sectional view, revealing its internal composition and the arrangement of its various parts.

• • •

3/5

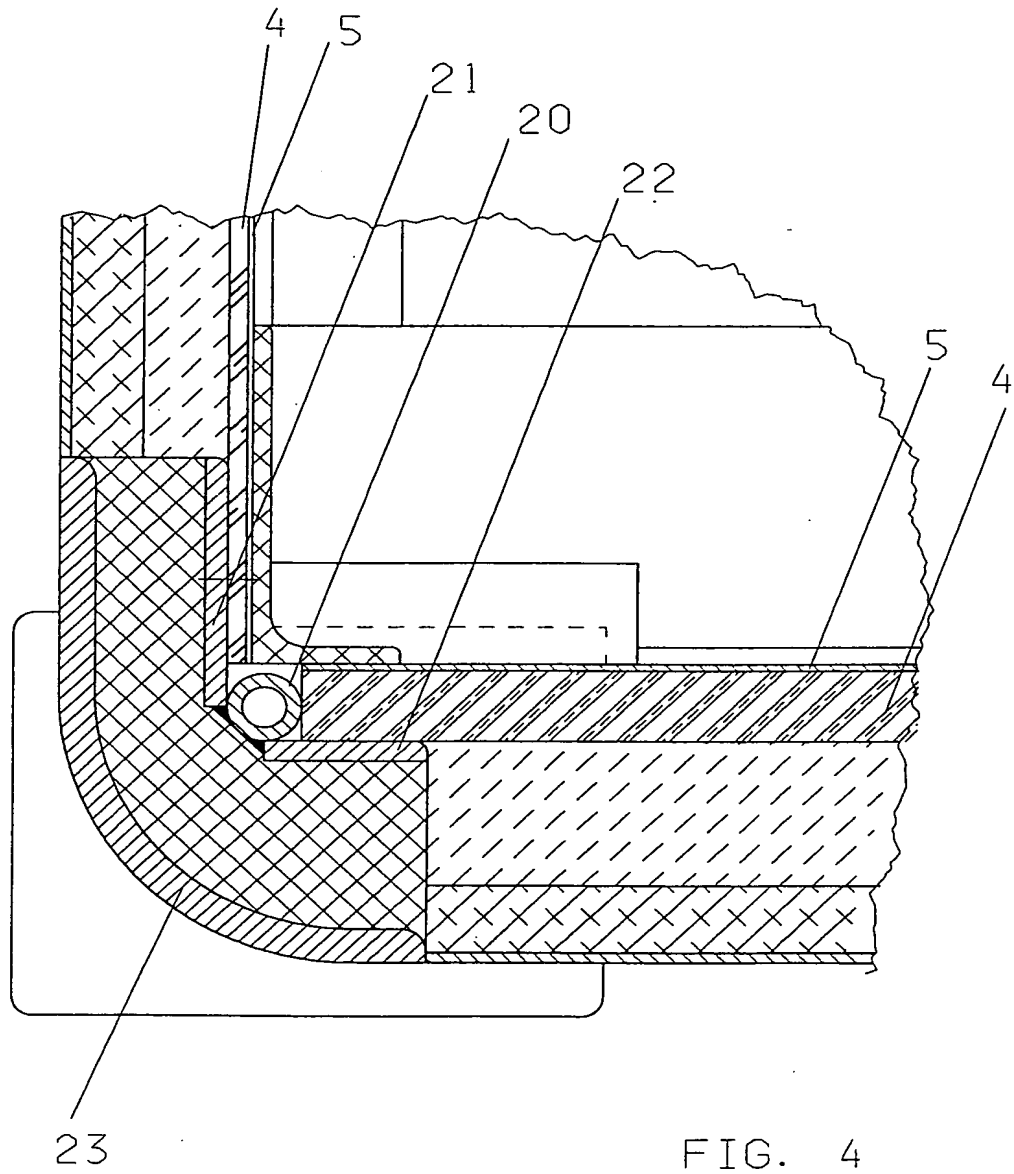


FIG. 4

4/5

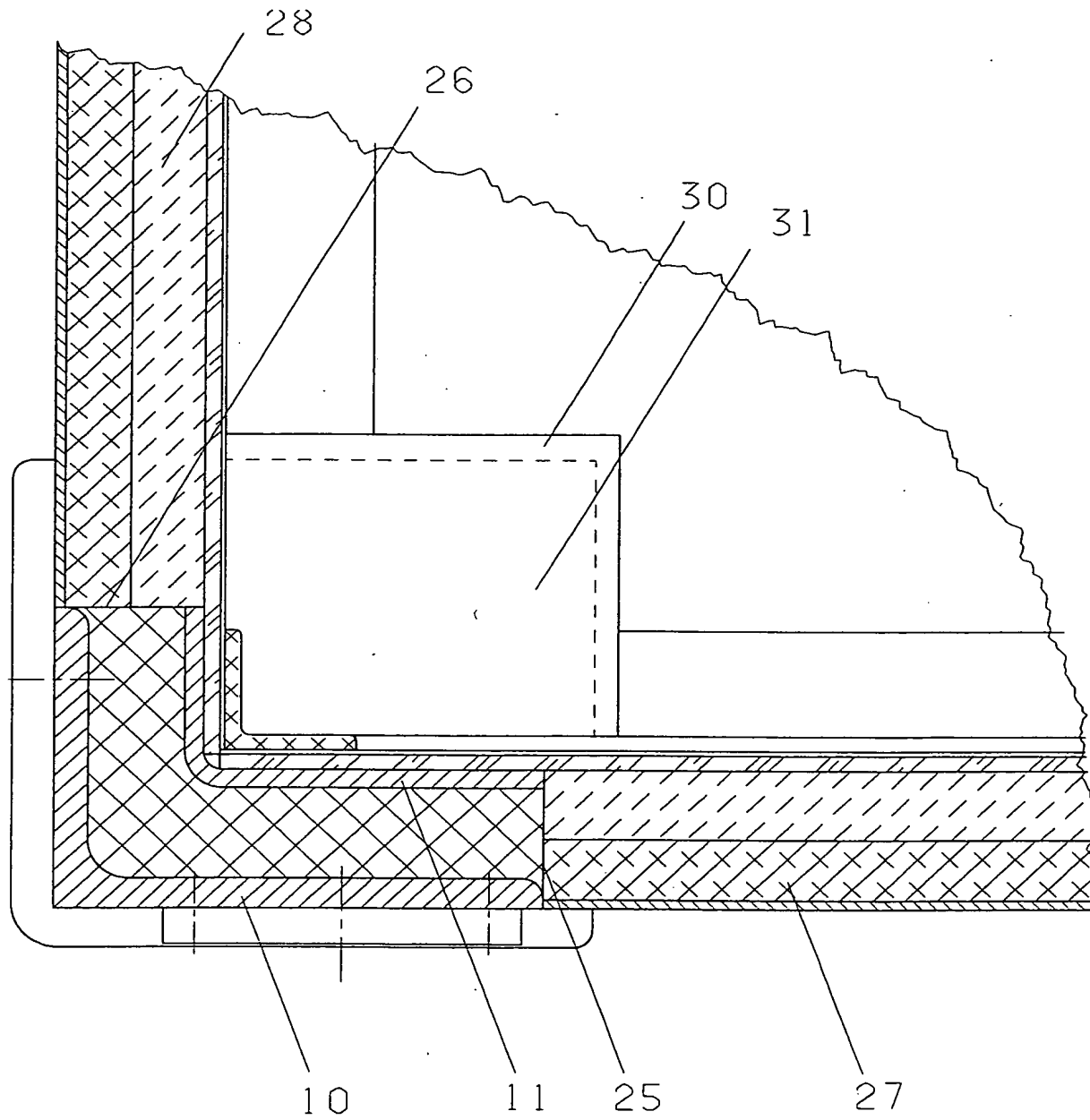


FIG. 5

5/5

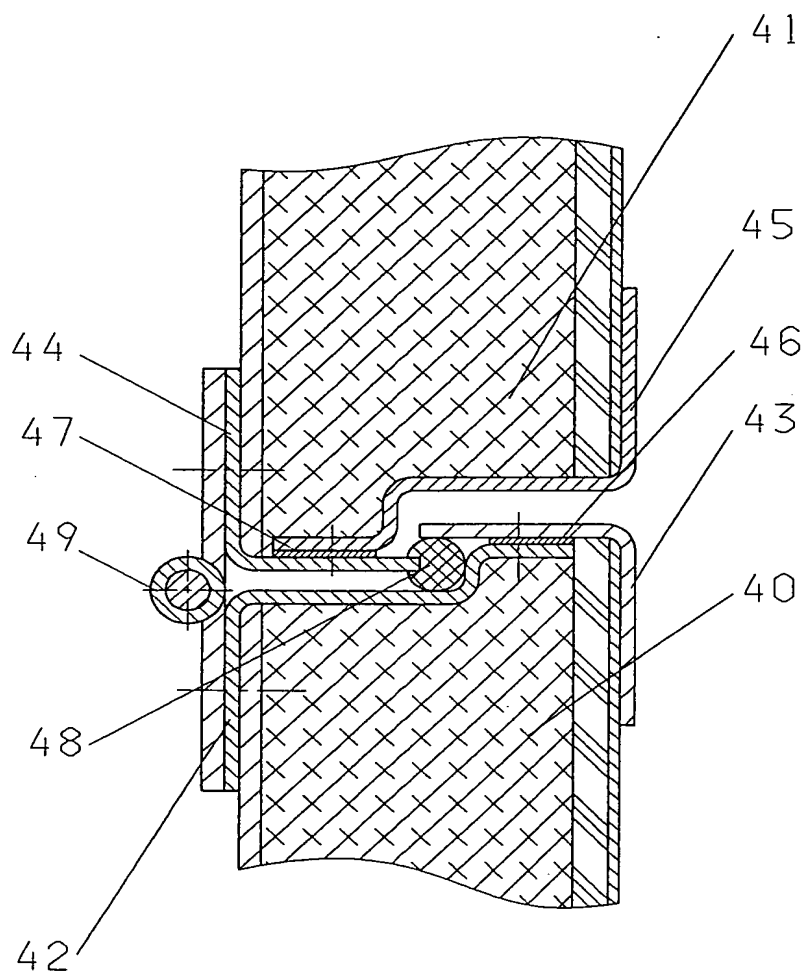


FIG. 6